REMARKS

Claims 1-41 are pending in the present application, with claims 1, 16 and 30 being the independent claims.

In the Official Action, dated January 19, 2006, claims 1, 13, 15, 16, 29 and 30 were rejected under 35 U.S.C. § 102(b) as allegedly anticipated by User Interface Markup Language Draft Specification, dated January 17, 2000, Copyright Harmonia, Inc., Language Versigon 2.0a ("UIML").

Additionally, regarding the dependent claims, claims 2-7, 17-22, 31-36 were rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over UIML in view of U.S. Patent Publication No. 2003/0070158 ("Lucas"). Claims 8-9, 23-24, 37 and 38 were rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over UIML in view of U.S. Patent Publication No. 2003/0212904 ("Randle"). Claims 10, 25 and 39 were rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over UIML in view of Lucas and further in view of Randle. Claims 11, 26 and 40 were rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over UIML in view of U.S. Patent Publication No. 2003/0058277 ("Bowman-Amuah"). Claims 12, 27 and 41 were rejected under 35 U.S.C. § 103(a) as allegedly unpatentable over UIML in view of U.S. Patent Publication No. 2004/0093344 ("Berger").

Initially, Applicants wish to gratefully acknowledge the withdrawal of the previous rejections based on non-statutory subject matter (§ 101) and Ankireddipally et al. (§§ 102/103) in the present Official Action, thereby reducing the number of outstanding issues for consideration. Having considered the new rejection based on root reference UIML (§§ 102/103), the outstanding rejections are respectfully traversed based on the following remarks.

Summary of the Invention

In an ideal distributed computing environment, a service would present itself to its clients, either automatically or by client request, in terms of the actions it can perform and the data it needs to send or receive in order to perform them, and according to what rules the clients need to follow to achieve the action and proper sending or receiving of the data. These presentations by services, also known as interface contracts, enable clients to classify services and communicate with them. Then, interoperability between service(s) and their client(s) is achieved by using wire format(s) derived from the interface specification(s). An ideal language for interface description would make the mapping between an interface specification and its wire format deterministic, simple and obvious; however, at the time of Applicants' invention, no such ideal language existed and thus there was a need in the art for such an interface description language.

In view of that need, the present invention provides a Type Description Language (TDL), an extensible markup language (XML) based language, which provides an interface description that makes the mapping between an interface specification and its wire format deterministic and simple. TDL leverages the duality between the type-based (objects) and XML-based views and may be used for exchanging metadata between various kinds of type (object) systems, such as Component Object Model (COM), Common Object Request Broker Architecture (CORBA), Common Language Runtime (CLR), etc.

Importantly, TDL proposes a new grammar for representing the behavioral aspect of a type and provides **that, for each type, there is a one to one mapping from the type to a schema type and vice-versa**. In this regard, as described on page 19, lines 16-20 of the specification, beginning with a particular type system, and using the TDL transformation

syntax or rules of the invention, a corresponding schema is developed for describing object or

device interfaces or services, and as a result, a common scheme for communicating service

descriptions between different objects or devices in a network is enabled. The common

scheme is enabled via the resulting one to one mapping of each type of a particular type

based system to an XML schema and vice versa, and no such comprehensive ability to

describe any service in a computing system has been known in the prior art.

Thus, the invention enables a way to describe a service of a device or object with an

extensible markup language (XML)-based Interface Description Language (IDL) that **one to**

one maps each type of a particular type-based system to an XML schema and vice

versa.

UIML and the Rejections under 35 U.S.C. § 102/103

In contrast, UIML purports to allow the creation of user interfaces (UIs) for devices

by having an author write a UIML document which includes presentation style appropriate

for the devices on which the UI will be deployed. The UIML document is then automatically

mapped to a language used by the target device, such as HTML, WML, VoiceXML, C++,

and so on. In this regard, the specific Document Type Definition (DTD) for UIML 2.0a can

be found in Appendix A.

In this regard, Applicants respectfully submit that there is simply no teaching or

suggestion anywhere in UIML, of a description language that **one to one maps each type** of

a particular type-based system to an XML schema, and vice versa.

Instead, a UIML document is automatically mapped to any of a variety of languages

used by the target device with the help of a toolkit and APIs on the device, with no disclosure

of such one to one mapping. As stated on page 9, last paragraph:

UIML captures the elements that are common to any UI through 28 generic elements. UIML syntax also defines language elements that map these elements to a particular toolkit. **However, the vocabulary of particular toolkits (e.g. a window or a card) is not part of UIML**, because the vocabulary appears as the value of attributes in UIML. Thus, UIML only needs to be standardized once, and **different constituencies of end users can define vocabularies that are suitable for various toolkits independently of UIML**.

Applicants respectfully submit that the above passage clearly indicates that UIML is mapped to devices by "vocabularies that are suitable for various toolkits," not "one to one" mappings from each type of a particular type based system to an XML schema and vice versa, as with the present invention.

Furthermore, the dictionary service example (UI on p. 13, code on pp. 14-15) of UIML is merely understood to disclose that a UIML document can be used to represent UI parts for dictionary word selection and resultant definition presentation to a user. However, nothing about the dictionary service example discloses that there is a "one to one" mapping from any particular type based system that displays the UI parts to an XML schema.

In this regard, Applicants respectfully submit that UIML thus cannot be said to teach or suggest "describing the service with an extensible markup language (XML)-based Interface Description Language (IDL) that **one to one maps each type of a particular type-based system to an XML schema and vice versa**," as recited, for instance, in claim 1, at least because there simply is no disclosure of any <u>one to one</u> deterministic mapping between each type of any particular type-based system to an XML schema.

Similarly, claims 16 and 30 recite "a mapping mechanism for describing a service of one of a device and object in a computing system with an extensible markup language

(XML)-based Interface Description Language (IDL) that **one to one maps each type of a particular type-based system to an XML schema** and vice versa."

Lucas, Randle, Bowman-Amuah, and Berger were cited for reasons related to the dependent claims, but also fail to teach or suggest at least the above-identified features of claims 1, 16 and 30.

Claims 2-13, 15, 17-27, 29 and 31-41 depend from base claims 1, 16 and 30, respectively, either directly or indirectly, and are believed allowable for the same reasons. For at least the foregoing reasons, reconsideration and withdrawal of the rejections to claims 1-13, 15-27 and 29-41 under 35 U.S.C. §§ 102, 103 is respectfully requested.

CONCLUSION

Applicants believe that the present Amendment is responsive to each of the points raised by the Examiner in the Office Action, and submit that Claims 1-13, 15-27 and 29-41 of the application are in condition for allowance. Favorable consideration and passage to issue of the application at the Examiner's earliest convenience is earnestly solicited.

Date: April 19, 2006

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